REMARKS

I. Summary of Office Action

In the Final Office Action mailed June 8, 2009, the Examiner rejected claims 49-62, 65-78 and 81 and objected to claims 63, 64, 79 and 80.

Claims 49-55, 59, 60, 65-71, 75, 76 and 81 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,757,771 ("Li") in view of U.S. Patent No. 6,721,316 B1 ("Epps"). Claims 56, 57, 72 and 73 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Li in view of Epps and further in view of U.S. Patent Application Publication No. 2002/0141427 A1 ("McAlpine"). Claims 58 and 74 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Li in view of Epps and further in view of U.S. Patent 6,658,014 B1 ("Tezuka"). Claims 62, 63, 77 and 78 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Li in view of Epps and further in view of U.S. Patent 5,778,414 ("Winter").

Claims 63, 64, 79 and 80 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants thank the Examiner for indicating the allowable subject matter.

II. Status of Claims

Applicant previously cancelled claims 1-48 and added claims 49-81. Pending are claims 49-81, of which claims 49, 65 and 81 are independent and the remainder are dependent.

III. Response to 35 U.S.C. § 103 Rejections

The Examiner rejected independent claims 49, 65 and 81 under 35 U.S.C. § 103(a) as being unpatentable over Li in view of Epps. The present application is directed to the managing of packet transmission, involving "receiving a plurality of packets from a computer host memory, wherein each packet has a header provided by a process running on a host processor;"

"reading at least one quality of service parameter from the header of each received packet;" and "storing each received packet into one of a plurality of queues according to the quality of service parameter." Each of these features, or language to that effect is recited in independent claims 49, 65 and 81.

A. Li Fails To Disclose "Storing Each Received Packet Into One of a Plurality of Queues According to the Quality of Service Parameter," Wherein the Quality of Service Parameter is Read From the Header of Each Received Packet

As cited by the Examiner, Li provides "a system and method of buffer management in an ATM switch that implements simultaneous delay and purge prioritization....algorithms are used to determine the order of queue output and purging in which the queues (instead of cells) are ordered for output and for purging" (Li, Col. 2, line 66 – Col. 3 line 14). For context, Li defines the combination of two sets of priorities – one set for purging and another set for controlling output, as a class of service (Li, Col. 2, lines 15-18).

In the Office Action, the Examiner concedes that Li does not specifically disclose "reading a quality of service parameter from the header of each received packet." Applicants submit that Li further fails to disclose "storing each received packet into one of a plurality of queues according to the quality of service parameter," wherein the quality of service parameter is read from the header of each received packet, as called for in the independent claims. The Examiner cites Li as teaching "a shared memory buffer architecture is employed in which multiple outputs share a single buffer that is divided into a plurality of data sub-queues – one for each combination of service class and output port..."(Li, Col. 3, lines 5-8).

The citation to Li, however, does not discuss the specific use of *quality of service* parameters as service class parameters, but rather an implementation based on output and purge rankings. In fact, Li states "To provide multiple Qos levels, conventional buffer management schemes have traditionally relied upon a single priority scheme. In such a scheme, a connection is assigned a priority that is used to determine either a calls output ordering or its congestion purge ordering.... The deficiency in such an approach is that a single priority cannot simultaneously accommodate both CBR and VBR traffic.... To solves the above deficiency, what is needed is two sets of priorities – one set for purging and another set for controlling output" (Li, Col. 1, line 66 – Col. 2, line 17). As such, the motivation behind Li's system and method is based on deficiencies of single priority schemes using quality of service parameters. Therefore, Applicants submit that Li not only fails to disclose storing received packets into different queues *according to the quality of service parameters*, but further discourages the use of single priority schemes based on quality of service parameters. As such, Applicants respectfully submit that Li does not disclose "storing each received packet into one of a plurality of queues according to the quality of service parameter."

Even assuming, for the sake of argument, that service class parameters (purging and outputting priorities) were construed to represent or include quality of service parameters, Applicants respectfully submit that Li still fails to disclose how they are acquired in reference to the received packets. Li merely states, in reference to Fig. 1A, "[i]n block 102, the class of service and selected output port for the incoming ATM data cell is determined. As noted above, the buffer memory of the ATM switch is divided into a plurality of data sub-queues for each combination of class of service and output port." Without additional information or context, Li is silent on *how* the class of service and selected output port is determined or where they been

acquired from. Accordingly, Applicants submit that Li fails to disclose "storing each received packet into one of a plurality of queues according to the quality of service parameter," wherein the service parameter is read from the header of each received packet, as required by the claim terms.

Accordingly, Applicants respectfully submit that independent claims 49, 65 and 81 are in condition for allowance. Further, Applicants submit that claims 50-64 and 66-80 are also allowable for at least the reason they depend ultimately from claims 49 and 65, respectively.

B. Epps Fails to Overcome the Deficiencies of Li And Further Teaches Away From Combining the Teaching of Li and Epps

In light of the Examiner's acknowledgement that Li does not specifically disclose "reading a quality of service parameter from the the header of each received packet," the Examiner further cites Epps. Epps is directed to a pipelined linecard architecture for receiving, modifying, switching, buffering, queuing and dequeuing packets for transmission in a communications network (Epps, Abstract). The Examiner cites Epps for disclosing "Header information used by routing devices for administrative tasks may include information about access control, accounting, quality of service (QoS), or class of service (CoS)" (Epps, Col. 1, lines 27-30), and routing treatments based on information in the header of inbound packets (Epps, Col. 1, line 65 – Col. 2, lines 20).

First, of all Epps teaches away from the combination with Li. As part of the discussion regarding routing treatments, Epps states, "A related limitation has been the inability of a general purpose digital computer to perform the necessary lookup and queue management functions using software in real time" (Epps, Col. 2, lines 44-47). As such, Epps discourages

implementing queue management functions for managing packet transmissions according to information acquired from the headers of received packets. Accordingly, Applicants submit that Epps teaches away from a combination of using header information with the queue management functions that Li teaches.

Moreover, even if the combination was made, none of the routing treatment examples provided by Epps relate to *queueing according to quality of service parameters*. As such, Applicants submit that Epps does not overcome Li's deficiencies of failing to disclose Applicants' claimed "storing each received packet into one of a plurality of queues according to the quality of service parameter," wherein the service parameter is read from the header of each received packet.

In light of the above, Applicants respectfully submit that independent claims 49, 65 and 81 are in condition for allowance. Further, Applicants submit that claims 50-64 and 66-80 are also allowable for at least the reason they depend ultimately from claims 49 and 65, respectively.

IV. Response to Objections

The Examiner rejected claims 63, 64, 79 and 80 as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants thank the Examiner for indicating the allowable subject matter. Dependent claims 63 and 64 depend upon intervening dependent claim 61, which depends upon independent claim 49. Dependent claims 79 and 80 depend upon intervening dependent claim 77, which depends upon independent claim 65.

Based on the discussion above, Applicants believe claims 49 and 65 are in condition for allowance, and therefore submit that claims 63, 64, 79 and 80 are also in condition for allowance.

V. Conclusion

Applicant respectively submits that, in view of the remarks above, pending claims 49-81 are allowable over the cited references. Applicant therefore respectfully requests withdraw of the current rejections. The Examiner is invited to call the undersigned at 312 913-2134 with any questions or comments.

Respectfully submitted,
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